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EXAMINER	
WOLVERTON, DAREN A	

ART UNIT	PAPER NUMBER
4183	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,186	PRIBAT ET AL.	
	Examiner	**Art Unit**	
	DAREN WOLVERTON	4183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 30 March 2006.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 March 2006 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 07/21/2006.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 07/12/2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed.

Items in the IDS that fail to comply with all the requirements of 37 CFR 1.97 and 37 CFR 1.98 have not been considered and have a line drawn through the citation to show that it has not been considered. The items of information that do comply with all the requirements of 37 CFR 1.97 and 37 CFR 1.98 have been considered by the examiner. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "95" and "9" have both been used to designate the pure metal portion of the substrate (FIG. 9 in step 201) and reference characters “9" and “5” have both been used to designate the metal portion of the substrate ("9" designates it in FIG. 1 and FIG. 2 then it switches to "5" for FIG.3 through FIG. 5).

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because: reference character “3” has been used to designate both carbon (page 9, line 14) and carbon nanotubes (page 9, line 33); reference character “71” has been used to designate both metal (page 14, line 22) and thin insulating layer (page 13, lines 17-18); and reference character "5" has been used to designate both nanoporous membrane (page 6, line 20) and microporous membrane (page 6, lines 25-26).

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 95.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: aluminum 9 is labeled in step 100 of FIG. 1 but not described until step 200; island 65 is labeled in step 1065 of FIG. 6 but not described in the specification until step 1080; the gate of the transistor is referred to as "grid" of the transistor (for example on page 13, line 20 and page 14, line 5); Metal 77 is labeled in step 1062 of FIG. 8 but not described until step 1122 in the specification; the paragraph on page 15, lines 29 to 32 describes FIG. 10 as containing only an optional step 201', however steps 301a onward are also included in FIG. 10 (this could be corrected by amending the paragraph on page 9, lines 12-17 to include mentioning that FIG. 10 illustrates the growing of the multiple layers of silicon and germanium); page 15 line 35 describes sequences 301a through 301b as part of FIG. 9 but they are part of FIG.10 (this can be corrected adding an indication that these items are in FIG. 10); page 15 line 34 recites the phrase “consists in a succession” which should be “consists of a succession”. Appropriate correction is required.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code (on page 1, lines 11-12). Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Objections

Claim 23 is objected to because of the following informalities:

The pronoun “itself” can refer to the component or the electrode, though it is clear that the electrode is meant.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, claim 1 uses the phrase “the method comprising the operations consisting in (sic):”, this phrase uses both the terms comprising and consisting to refer to the steps of the method (see MPEP 2111.03 for the difference between these terms) and it is unclear whether the resulting method should be open or closed to the inclusion of other material than what is claimed. As best as can be determined by the examiner, it is meant the method is to be inclusive of other material than what is claimed. This interpretation will be used for examination purposes in this action.

Regarding claim 2, the term “calibrated pores” does not have a well-defined meaning in the art rendering the claim indefinite. For the purpose of this action "calibrated pores" will be read as meaning pores whose size can be set by varying process parameters.

Regarding claim 22, the term “the plane of the substrate” lacks of antecedent basis. For the purpose of this action, "the plane of the substrate" will be read as "a plane of the substrate".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 10, and 12-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Li et al. (“Highly-ordered carbon nanotubes…” henceforth Li) as evidenced by Nakano et al. (“Effect of electrolysis factors…” henceforth Nakano).

Regarding claims 1 and 5, FIG.1 (a) of Li discloses creating electric components (nanotube array; page 367, first column, lines 8-10) by depositing, in an nanoporous membrane, a metal catalyst (Co) suitable for penetrating into at least some of the pores of the nanoporous membrane (middle step in FIG.1 (a)); and causing filamentary structures to grow on the catalyst in at least some of the pores in the nanoporous membrane (last step of FIG.1 (a)). Li, FIG. 1 (a), also discloses that the nanoporous membrane (NCA) is formed with the bottom of the pores intersecting with

an aluminum substrate, therefore at least part of the walls of the pores (since the walls of the pores include the bottoms, see claim 5 of the applicants own specification) are composed of single crystal zones (since the claim recites 'single crystal zone' and not 'single crystal material' so that the broadest reasonable interpretation of ‘single crystal zone’ is a crystallite or grain of a monocrystalline or polycrystalline material. The bottom of the pores must comprise single crystal zones since they are made out of aluminum which is either a polycrystalline or monocrystalline material). Li on page 367, second column, last line, discloses that the metal catalyst at the bottom of the pores (FIG .1 (a) second step) is electrochemically deposited, which inherently means that at least some of the catalyst (that grown on the single crystal zones at the bottom of the pores) is epitaxially grown because the metal will form in a single crystal zone of the aluminum in at least some of the pores, and will thus inherently be initially deposited epitaxially (see Nakano, page 47 lines 3-6).

Regarding claim 2, Figure 1(a) of Li further discloses the nanoporous membrane having alumina pore diameters sizes can be set (page 367, second column, lines 2-10). See the 112 rejection above.

Regarding claim 3, FIG. 1 (a) of Li shows that the nanoporous membrane is made in a manner suitable for ensuring that it extends substantially in a plane (an x-y plane formed which is formed parallel to the upper surface of the NCA template), and the pores are made in a manner suitable for ensuring they are oriented substantially perpendicularly to the plane of the membrane (the individual tubes extend in the z direction, which is substantially perpendicular to the x-y plane).

Regarding claim 4, Li, FIG. 1 (a), shows that the nanoporous membrane is made in a manner suitable for ensuring that it extends substantially in a plane (the x-z plane in the figure), and the pores are made in a manner suitable for ensuring they are oriented substantially parallel to the plane of the membrane (the individual tubes extend in the z direction, which is substantially parallel to the x-z plane).

Regarding claim 10, Li further discloses that the Co catalyst is deposited in the pores by electrochemical deposition which is a synonym for electroplating.

Regarding claim 12, Li further discloses that Co catalyst is annealed after deposition (page 368, first column, lines 9-10).

Regarding claim 13 and claim 16, Li, FIG. 1 (a), further discloses that the catalyst comprises cobalt i.e. a transition metal, and therefore the annealing (of the cobalt catalyst) is inherently performed under a magnetic field since cobalt is ferromagnetic.

Regarding claim 14, FIG. 1 (a) of Li discloses that an electronic component (page 367, first column, lines 8-10, wherein each nanotubes is considered a separate component of the array electrical component) is made on the nanoporous membrane (the broadest reasonable definition of "on" being in contact with or in the immediate proximity).

Regarding claim 15, FIG. 1 (a) of Li further discloses that the nanoscale filamentary structures are carbon nanotubes.

Regarding claim 17, Li discloses that the carbon nanotubes are grown by chemical vapor deposition (though not explicitly stated, the process of CVD is described on page 368, first column, lines 2-7 and lines 1, 2 in first column on page 369).

Claims 1 and 18-19 are rejected under 35 U.S.C. 102(a) as being unpatentable over Lew et al. (“Growth characteristics of silicon…”, henceforth Lew) as evidenced by Nakano.

Regarding claim 1, Fig.1 of Lew discloses creating electronic components (building blocks, page 14, second column, lines 8-10) by depositing, in an nanoporous membrane (Fig.1 (a)), a metal catalyst suitable for penetrating into at least some of the pores of the nanoporous membrane (Fig.1 (c)); and causing filamentary structures to grow on the catalyst in at least some of the pores in the nanoporous membrane (Fig.1 (e)). Fig. 1 of Lew also discloses that the metal catalyst is formed with the bottom of the pores intersecting with a silver substrate (Fig. 1 (c)), therefore at least part of the walls of the pores (since the walls of the pores include the bottoms, see claim 5 of the applicants own specification) are composed of single crystal zones (since the claim recites 'single crystal zone' and not 'single crystal material' so that the broadest reasonable interpretation of ‘single crystal zone’ is a crystallite or grain of a monocrystalline or polycrystalline material. The bottom of the pores must comprise single crystal zones since they are made out of silver which is either a polycrystalline or monocrystalline material). Fig. 1 (c) of Lew discloses that the metal catalyst is electrochemically deposited, which inherently means that at least some of the catalyst

(the catalyst grown on the single crystal zones) is epitaxially grown because the metal will form in a single crystal zone of the silver in at least some of the pores (see Nakano, page 47 lines 3-6). Further, lines 1-5 in column 2 on page 15 of Lew disclose that the single crystal Si nanowires diameter is determined by the pore size of the membrane, therefore the nanoporous membrane of Lew inherently having the pores that include single crystal zone in order to form a single crystal Si nanowires in at least some of those pores.

Regarding claim 18, Lew, in Fig. 1 (e) further discloses that the structures formed are nanowires.

Regarding claim 19, Lew, in Fig. 1 (c) further shows that the catalyst used is gold.

Claims 1, 20-21, and 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Li as evidenced by Nakano.

Regarding claim 1, Li, FIG.1 (a), discloses creating electric components (nanotube array; page 367, first column, lines 8-10) by depositing, in an nanoporous membrane comprising a layer of alumina over a layer of aluminum, a metal catalyst suitable for penetrating into at least some of the pores of the nanoporous membrane (middle step in FIG.1 (a)); and causing filamentary structures comprising carbon nanotubes to grow on the catalyst in at least some of the pores in the nanoporous membrane (last step of FIG.1 (a)). Li, FIG. 1 (a), also shows that the bottoms of the pores of the nanoporous membrane are aluminum. Because aluminum metal comprises

the bottoms of the pores and the bottom of the pores are part of the walls so at least part of the walls must therefore be composed of single crystal zones (since the claim recites 'single crystal zone' and not 'single crystal material' so that the broadest reasonable interpretation of ‘single crystal zone’ is a crystallite (also called a grain). The bottom of the pores must be ‘single crystal zones' since they are composed of aluminum which is either polycrystalline or monocrystalline). Li also discloses that the metal catalyst at the bottom of the pores (FIG .1 (a) second step) is electrochemically deposited (page 367, second column, last line) which inherently means that at least some of the catalyst grown on the single crystal zones at the bottom of the pores is epitaxially grown (see Nakano, page 47 lines 3-6).

Regarding claims 20 and 24, Li discloses forming a component for electronics that includes at least one carbon nanotube (see the claim 1 rejection above), that component comprising: a nanoporous membrane in which the pores include a single-crystal zone (the membrane from claim 1); and a metallic catalyst deposited in at least some of the pores of the nanoporous membrane, at least part of the catalyst being grown epitaxially on the single-crystal zone of the nanoporous membrane (the catalyst from claim 1).

Regarding claim 21, Li, in FIG. 1 (a), discloses that the bottom of the membrane is aluminum metal. This metal constitutes an electrode enabling a voltage to be imparted to at least one filamentary structure deposited in another portion of the nanoporous membrane (the upper NCA portion).

Regarding claim 23, Li discloses cobalt catalyst in the bottom of the pores, in contact with the aluminum portion of the membrane. After the formation of nanotubes this cobalt catalyst, being metal, becomes an extension of the aluminum electrode portion of the membrane into the pores of the membrane.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Du et al. (CN 1278024, henceforth Du, DERWENT and machine translation included).

Regarding claim 6, Li discloses all of the limitations of claim 1 but does not disclose the nanoporous membrane is made by anodic oxidation of a single-crystal substrate. Du discloses a method of forming a large-area ordered nanometer template on a single-crystal aluminum substrate (NOVELTY portion of the DERWENT abstract). Du also discloses that using a single-crystal aluminum substrate removes the influence of grain boundaries on the product (see the 4th paragraph of the machine translation). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the nanoporous membrane of Li from a single crystal substrate using

anodic oxidation process such as taught by Du in order to remove the influence of grain boundaries on the aluminum oxide template.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Masuda et al. ("Fabrication of Gold Nanodot…", henceforth Masuda) and Stevens et al. (US 4,784,973, henceforth Stevens).

Regarding claim 7, Li discloses all of the limitations of claim 1 but does not disclose that the nanoporous membrane is made in a thin layer transferred or deposited onto a single crystal substrate. However, it is common in the art to use single crystal silicon wafers as substrates (see for example Stevens, column 1, line 11). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use a silicon wafer as a substrate for the array described in Li, with the aluminum substrate supported by the silicon wafer, in order to be able to use the array disclosed by Li on a wafer of suitable material for further processing using standard semiconductor processes.

The above described combination of Li and Stevens does not disclose that the nanoporous membrane is made in a thin layer transferred or deposited onto the single crystal substrate. However, figure 1 of Masuda discloses a method of forming alumina templates that consists of growing a nanoporous alumina thin film on an alumina substrate (through a two step method, Fig. 1 a-d), and then transferring that film to a separate substrate (Fig. 1 e-i) to be used for the formation of devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to

form the nanoporous alumina required in the method of Li by using the method disclosed in Masuda, as choosing a known method to perform a needed step is obvious.

Regarding claims 8-9, the above described combination of Li, Masuda, and Stevens does not disclose a barrier layer is made on the single-crystal substrate, prior to transferring or depositing the thin layer onto the single-crystal substrate, the material of said barrier layer forming a diffusion barrier and being suitable for preventing the catalyst, at least in part, from being contaminated by the material constituting the substrate. However, as it is common in the art to use a layer of titanium nitride to prevent diffusion between aluminum and silicon (see for example Stevens, column 1, lines 16-17 and 27-29), it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a diffusion barrier layer between the silicon single-crystal wafer and the aluminum layer upon which the alumina template will be placed, prior to the placement, for the purposes of preventing unwanted diffusion between silicon and the aluminum (especially during the tube growth and annealing steps). Note: that this barrier is suitable for preventing silicon diffusion into the catalyst.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Shaffer et al. (WO02/092506, henceforth Shaffer).

Regarding claim 11, Li discloses all of the limitations of claim 1, but discloses that the cobalt catalyst is deposited in the pores by electrochemical deposition rather than chemical vapor deposition. Shaffer discloses a method of creating nanotubes that includes deposing a cobalt catalyst (page 5, lines 17-20, and the WIPO abstract) on an

alumina substrate (page 7, line 3) by using a precursor gas (page 6, lines 12-13) that decomposes on the substrate to form the catalyst (WIPO abstract). Though Shaffer discloses that the substrate particles are dispersed in the reaction gas which is a mixture of the catalyst and nanotubes precursors, one of ordinary skill in the art at the time of the invention would have realized that the method would work on larger alumina substrates and it the catalyst precursor gas does not need to be mixed with the nanotubes precursor gas. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of depositing the catalyst as disclosed by Shaffer in place of the technique disclosed by Li because the simple substitution of one known element for another would have yielded predictable results at the time of the invention and one of ordinary skill in the art would be motivated to make such a substitution in order to avoid the step of reducing the Co catalyst after deposition.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li.

Regarding claim 22, Li discloses all of the limitations of claim 20, but does not disclose that the component is on a substrate. However as it is extremely well known in the art that electronic devices are processed using wafers as substrates, it would have been obvious to one of ordinary skill in the art at the time of the invention to place (or alternately form) the component of Li on a substrate, with the nanotubes normal to the plane formed by the top surface of the substrate, in order to create an electronic components using standard processing technology. Note: that in the above described

modification the nanotubes extend parallel (in the z direction) to a plane of the substrate (the x-z plane).

Regarding claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Wagner et al. (“Vapor-Liquid-Solid Mechanism of ...", henceforth Wagner).

Regarding claim 25, Li discloses all of the limitations of claim 20, but discloses that the nanoscale filamentary structures are nanotubes instead of nanowires or nanorods. Wagner discloses a method for growing Si nanowires (called whiskers in the paper) using the VLS mechanism with gold as a catalyst. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference of Li to use the method of Wagner by using gold catalyzed Si wire growth method disclosed by Wagner instead of the cobalt catalyzed carbon nanotube growth technique disclosed by Li for the purposes of creating highly ordered arrays of parallel Si nanowires with narrow size distribution.

Conclusion

The prior art made of record and not relied upon that is considered pertinent to applicant's disclosure:

1. Kim et al. (US PGPUB 2005/0255581 A1) which discloses the creation of nanoporous structures through anodization and their use in devices;

2. Lacombe et al. (US PGPUB 2005/0276743 A1) which discloses the creation of carbon nanotubes in nanoporous structures using catalytic transition metals;
3. Little (US PGPUB 2002/0192141 A1) which discloses the use of magnetic fields to control carbon nanotube growth; and
4. Tuominen et al. (US PGPUB 2002/0158342 A1) which discloses the use of nanowires to create multilevel devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAREN WOLVERTON whose telephone number is (571) 270-5784. The examiner can normally be reached on Monday to Thursday from 9:30 a.m. to 3:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Matthew Landau can be reached on (571) 272-1731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. W./
Examiner, Art Unit 4183

/Minh-Loan T. Tran/
Primary Examiner
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